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**From:** JAMES D WALKER  
**Sent:** Tue 12/19/2017 6:36:59 PM  
**Subject:** Draft Summary of discussion with Excelsior and ADEQ on 12-15-17 conference call agenda for 12-15 meeting .pdf

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Hi Kate,

Jim Walker participated in a conference call with EPA, Excelsior, and ADEQ staff on 12/15/2017 to discuss topics related to the draft Class III permit for authorization of the Gunnison Copper ISR Project. Excelsior provided an agenda listing the topics of concern for discussion on the call, which is attached for reference to the topics discussed on the call. EPA stated that it would not be appropriate to negotiate any changes to the draft permit conditions at this stage of the public participation process. EPA agreed to listen to and document the concerns expressed on the call, but no official response would be provided before reviewing all written comments at the conclusion of the public comment period. Below is a listing of the agenda topics and related permit conditions with a brief summary of the discussion of each topic:

1. **Part II.F.1 Monitoring Program:** Excelsior proposes to install and monitor specific conductance (SC) in three hydraulic control (HC) wells instead of installing the three observation well (OW) pairs required by the permit at the eastern boundary of the wellfield before year 1 operations begin. This would be similar to the permit conditions for installing three HC wells at the southern boundary for monitoring specific conductance and water quality during the first year of operations. If an SC or water quality exceedance is detected at the outer intermediate monitoring wells (IMWs) or HC wells, the OW pairs associated with those HC wells would be drilled and pumping at the HC wells would be activated at the eastern and southern wellfield boundaries.

Excelsior stated that maintaining an inward hydraulic gradient at the eastern wellfield boundary may not be possible during the first year of ISR operations, but monitoring at the IMW and HC monitoring wells should provide detection and adequate control of ISR fluid movement in the first year of operations.

Groundwater drawdown modeling and related figures indicate that the three pumping HC wells would provide insufficient drawdown to generate an inward flow gradient at the eastern wellfield boundaries in the first year of operations. However, Excelsior presented a particle tracking analysis at the first mine block

that shows ISR fluid movement limited to within close proximity of mine block I in year 1. The reason given for not activating more than three HC wells, at the northeastern wellfield boundary, in the first year of operations was for groundwater conservation purposes and consistency with ADEQ permit requirements for conservation of groundwater.

2. **Part II.E.3a.ii (A): Casing and cementing records in existing test wells and coreholes:** Excelsior states that casing and cementing records are not generally available for existing test wells and coreholes that will be converted to IMWs. If the records are available for a well or corehole, the EPA permit requires that the records be provided to EPA. If not provided but converted to IMWs, external well integrity would be uncertain and monitoring data would be unreliable. Also, the reference to Part II.C.10 in this topic is incorrect.
3. **Table A-1 in Appendix A** is revised to reflect a slight location change of Block 1 and one of the IMWs in Table A-1 will be plugged and abandoned prior to Year 1.
4. **Footnotes at end of Tables 1 and 2:** The footnotes are not consistent with the schedule of point-of-compliance (POC) well and OW installation and should be changed accordingly. The schedule calls for installation of three HC wells, three POC wells, and two OWs in year 1. Although this was not discussed on the call, the schedule should include installation of the three HC wells at the southern boundary and either three additional OW pairs or three additional HC wells the eastern boundary for monitoring purposes in year 1, as discussed in topic 1 above. The schedule for activation of the additional HC wells and installation of the associated OW pairs will depend on the monitoring results as discussed in topic 1 and EPA approval. The schedule should be revised to reflect those changes, with footnotes to explain the conditions in which those HC wells would be activated for pumping and OWs installed for monitoring. EPA understands the comment and will consider the requested changes and other changes to the schedule discussed above for inclusion in the final permit.
5. **Part II.F.3.a:** This is a request for clarification of permit language. The proposed schedule for obtaining baseline water quality requirements should be revised in accordance with the revised installation schedule for HC wells, OWs, and POC wells. EPA will consider the requested changes for inclusion in the final permit. The final schedule is subject to EPA approval.
6. **Part II.F.4:** This is a request for clarification of permit language. Excelsior

requests permit language changes for consistency with comments regarding the HC, POC, and OW installation schedule in topics 4 and 5 above. EPA will consider the requested changes for inclusion in the final permit.

7. **Part II.G.2.c:** Excelsior requests permit language changes for consistency with comments regarding the HC, POC, and OW installation schedule in topics 4, 5, and 6 above. EPA will consider the requested changes for inclusion in the final permit.
8. **Part II.H.1.i:** EPA agrees that “HC wells” should be added to the text for clarification.
9. **Part II.F.6.a.i:** EPA agrees that monitoring SC in outer OWs should be added to the text for clarification. Although not discussed on the call, baseline data for HC wells should also be collected, especially in those HC wells installed in year 1 for SC and water quality monitoring in lieu of OW installation and monitoring in year 1. Baseline SC data should also be recorded in pumping HC wells to monitor ISR fluid capture in those wells. EPA will consider the requested changes and other changes to baseline data collection requirements discussed above for inclusion in the final permit.
10. **Part II.E.6.d:** Excelsior recommends removing the TPH-DRO analysis requirement because it is considered unnecessary if BTEX levels are monitored and are below MCLs. Excelsior clarified that monitoring TPH-DRO concentrations in the lixiviant is acceptable, but is against setting limits on it. Excelsior offered to submit alternative language for this provision. EPA will consult internally for consideration of changes to this requirement.
11. **Clarification on temperature logging requirements at Part II.C.2:** Walker commented that the requirement for running a temperature log in the open hole during drilling and construction operations is not necessary and can be deleted. Temperature logs are required after casing is installed and cemented in all project wells. Secondary temperature logs are only required if a loss of external well integrity is detected or suspected based on unexpected injection rate and/or pressure changes in a well. The guidance document in Appendix D applies only to secondary temperature logging operations.

EPA requested that Excelsior submit the exhibits used in their presentation if not included in the permit application, and Excelsior agreed to provide those exhibits with follow-up documents submitted to EPA.

In response to questions from Excelsior, EPA stated that no request for a public hearing and no other comments on the draft permit have been received to date. The deadline for submitted comments is January 8, 2018, and that applies to comments from ADEQ and Excelsior in addition to other interested parties and the general public .

If anyone has any questions or comments on the summary, please let me know. Please feel free to amend or add to the summary if I have omitted or mischaracterized an important part of the discussion.

Thanks,

Jim